

ATTACHMENT - CLAIMS LISTING

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) Equipment for cleaning rubber cylinders of continuous printing machines, said equipment comprising:

a cleaning device with means for causing a very small quantity of liquid for cleaning the cylinders to be sprayed in a controlled and uniformly distributed way onto a piece of cloth, the cloth, including the area directly acted on by the sprayed liquid, is kept being kept in uniform and distributed contact with a transverse portion of a surface of the cylinder to be cleaned;

a rectilinear deformable strip; and

a rectilinear deformable presser,

wherein the rectilinear deformable strip and the rectilinear deformable presser, respectively, are is adapted to push the cloth into close and uniformly distributed contact with a rotating cylinder one of the cylinders to be cleaned being in a rotating condition, upstream and downstream of the transverse portion, using the rectilinear deformable strip and the rectilinear deformable presser, respectively, the rectilinear deformable strip and the rectilinear deformable presser each having a convex surface facing the cylinder to be cleaned;

the deformable presser comprising an elastomeric membrane with a profile substantially in the form of an isosceles trapezium whose longer base is fixed

perimetricaly and with a seal to an edge having a conjugate profile of a chamber (H) of a cross-piece fixed on the equipment, a shorter base of the membrane having a profile which is initially slightly convex in the direction of the cylinder to be cleaned and has a low-relief shape; and

wherein the cleaning device is arranged so that the cleaning liquid acts through the cloth on the cylinder to be cleaned in an extended, uniform and progressive way, and so that the liquid is retained in a cleaning area by means of the cloth and the rectilinear deformable presser and rectilinear deformable strip, so that the cloth does not fall off and so that the cloth is put in contact with the dirt on the cylinder in a gradual and controlled way, the deformable presser facilitates penetration of the liquid into the cloth and promotes the elimination and removal of dirt by its by a contact surface of the cloth which is characterized by a low-relief configuration.

2. (Cancelled)

3. (Currently Amended) The equipment according to claim 1, wherein the deformable presser has an active surface with a low-relief shape of an active surface of the presser comprises, the low-relief shape comprising solid areas designed to come into contact with the cloth and comprises recessed areas arranged in a sinuous pattern, the recessed areas forming channels of suitable depth, into which the cloth penetrates under pressure from solid dirt which accumulates on portions of the cloth not in contact

with said solid areas, and the channels having a shape which is initially outwardly diverging.

4. (Currently Amended) The equipment according to claim 3, in which wherein the active surface of the deformable presser comprises projecting parts of the active surface of the presser having small round studs which are adapted to be in contact with the cloth by means of small round studs which are cloth, the round studs spaced at equal intervals in a plurality of rows aligned with the longitudinal axis of the deformable presser, the rows being parallel to each other and staggered by half a step, so that the round studs of one row are positioned in empty space lying between two consecutive studs of adjacent rows and the width of this empty space being made to be less than the width of each round stud.

5. (Currently Amended) The equipment according to claim 4, wherein the number of longitudinal rows of projecting parts of an elastic membrane of the deformable presser is ten.

6. (Currently Amended) The equipment according to claim 4, wherein the projecting parts of the active surface of the deformable presser are aligned with each other in oblique rows and each oblique row comprises ten projections.

7. (Currently Amended) The equipment according to claim 3, wherein each the active surface of the deformable presser comprises at least one projecting part of the active surface of the presser is part, each projecting part formed by a point having a truncated conical shape, with an extraction angle (C) of approximately 20° and a base which has a truncated conical shape and has an extraction angle (E) of approximately 90°, bases of the various projecting parts being joined together to form hexagonal patterns.

8. (Currently Amended) The equipment according to claim 7, wherein bases of the projecting parts in outer longitudinal rows of the active surface of the deformable presser are joined to the active surface by an outer shape which is semi-elliptical in plan view.

9. (Currently Amended) The equipment according to claim 1, wherein the deformable presser has an elastic membrane with a low-relief active surface, a width (L1) of a low-relief active surface of an elastic membrane of the presser is of the low relief active surface being approximately 25 mm, and the and a total width of the elastic membrane is membrane being approximately 42 mm.

10. (Currently Amended) The equipment according to claim 3, wherein the deformable presser has an active surface which comprises round studs of points of projecting parts of the active surface of the presser, which contact the cleaning cloth, are flat, are the round studs spaced apart in each row with an interval of approximately 3 mm, have a having a diameter of approximately 2 mm each and have a having a height of approximately 0.5 mm.

11. (Currently Amended) The equipment according to claim 5, wherein the projecting parts of the deformable presser have respective active surfaces at vertical distances above a theoretical base plane (G), from the outside towards the center: H1 = 1 mm, H2 = 1.4 mm, H3 = 1.7 mm, H4 = 1.9 mm, H5 = 2 mm.

12. (Currently Amended) The equipment according to claim 5, wherein the longitudinal rows of the projecting parts of the active surface of the deformable presser are at horizontal distances from a longitudinal mid-line plane (Q), from the innermost rows towards the outside: M5 = 1.3 mm, M4 = 3.9 mm, M3 = 6.5 mm, M2 = 9.09 mm, M1 = 11.69 mm.

13. (Currently Amended) The equipment according to claim 1, further comprising:

at least one robust rectilinear bar, parallel to each rubber cylinder and movable on command towards and away from respective cylinders, ends of the bar being fixed to shoulders which extend away from the cylinder and which support the ends; and

means for driving and braking shafts of reels which are parallel to the bar and designed to feed and collect the cloth which runs, with desired tension, over a concave front surface of the bar, the concave front surface having rounded upper and lower edges, and having ~~a sealing strip and a~~ the rectilinear deformable strip and the ~~rectilinear elastomeric presser respectively, parallel to the rounded upper and lower edges, both the sealing strip and the presser being rectilinear and made from~~ elastomeric material, the front concave surface of the bar having seats formed at a distance from a portion of the cloth which is not acted on by the rectilinear deformable presser and which lies between the rectilinear deformable presser and the pressure rectilinear deformable strip, the seats having nozzles connected to a distribution circuit and to the means for spraying a cleaning liquid.

14. (Currently Amended) The equipment according to claim 13, wherein a length of the cloth positioned in front of an active surface of the rectilinear deformable presser is substantially equal to a length of the cloth positioned in front of a row of the nozzles and lying between the rectilinear deformable presser and the sealing rectilinear deformable strip.

15. (Currently Amended) The equipment according to claim 13, wherein the sealing rectilinear deformable strip has a tubular rubber section having a profile substantially in the shape of a figure of eight, partially housed in a suitable rectilinear recess formed in the front concave surface of the bar, and partially projecting from this recess to contact the cloth.

16. (Currently Amended) The equipment according to claim 13, wherein the rectilinear deformable sealing strip has a single cavity and a continuous longitudinal thickening in a part designed for contact with the cloth.

17. (Currently Amended) The equipment according to claim 13, wherein a cross-piece supports the elastomeric membrane of the rectilinear deformable presser which acts on the cloth downstream of an area in which the cleaning liquid is sprayed, the cross-piece being mounted in a seat formed in the rectilinear bar with proper bottom clearances and by means of at least one pair of pins.

18. (Previously Presented) The equipment according to claim 1, further comprising at least a second one of the cleaning devices, the cleaning devices arranged as mirror images of each other, in the quadrant lying between 12 and 3 o'clock for a right-hand

cylinder and in the quadrant lying between 12 and 9 o'clock for a left-hand cylinder, means being provided to keep the cleaning devices in the active position of interaction with the cylinders while the cylinders remain active and in contact with the continuous paper web (N) which is used as means for removing and eliminating dirt softened by the cleaning devices, the cleaning devices being made to be removed from the cylinders on completion of the cleaning of the cylinders, in such a way that the dirt collected by a portion of cloth positioned in front of the presser and residual liquid fall into a tray positioned under each cleaning device and designed so that it can be cleaned in its turn.

19. (Previously Presented) The equipment according to claim 18, further comprising means to cause the cleaning devices to be carried in successive active movements of interaction with the corresponding cylinders without substantially modifying the position of the cloth in front of the corresponding presser, so that the cloth is used thoroughly, in a way compatible with its resistance to wear, means being provided to cause the cloth of each cleaning device to be made to advance longitudinally only after a plurality of operating cycles, to remove a part of the cloth positioned in front of the presser and to replace the part of the cloth with a portion of the cloth which was previously positioned in front of the nozzles.

20. (Previously Presented) The equipment according to claim 19, further comprising means to cause a portion of cloth lying between a feed reel and a collection reel to be

brought to a desired longitudinal tension when the cleaning devices are moved away from the corresponding cylinders, to facilitate the detachment of the dirt from the cloth.

21. (Previously Presented) The equipment according to claim 18, wherein the means which keep the cleaning devices in the active position of interaction with the cylinders to be cleaned provide a continuous and/or variable modulated pressure to the devices.

22. (Previously Presented) The equipment according to claim 1, further comprising at least a second cleaning device, wherein one of the cleaning devices which acts on an upper cylinder is positioned in a quadrant of the respective cylinder lying between 1 and 3 o'clock, while a lower one of the cleaning devices is positioned in a quadrant of the lower cylinder lying between 3 and 5 o'clock.

23. (Previously Presented) The equipment according to claim 1, further comprising means to cause the cylinders to be cleaned with a number of movements of the cleaning devices towards and away from the cylinders.

24. (Currently Amended) The equipment according to claim 3, wherein following elastic deformation of the surface of the deformable presser in contact with the cylinder to be cleaned, the channels remain open, to allow the cloth and the dirt to enter them

and become self-compacted in them and then to emerge from the channels easily when the whole equipment is removed from the clean cylinder at the end of the cycle.

25. (Previously Presented) The equipment according to claim 6, wherein the active surface of the presser has an inclination (A) of approximately 30° to the transverse axis of the said presser.